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LECTURE

ON

THE CAUSES AND TREATMENT

OF

SYPHILIS.

LECTURE II.

BY

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LECTURES

ON

THE CAUSES OF CHANCROID.

LECTURE I.

Since the name "chancroid," first presented to the medical world by Clerc, is now universally employed to express that primary venereal form which is local and non-constitutional in its manifestations, it is fitting that we begin our proposed labors by a consideration of its cause. Probably the best definition of this primary venereal ulcer, is that given some years since by M. Fournier, ("Dict. de Méd. et de Chir. practiques.") Chancroid is a specific malady, consisting in a peculiar ulcer which secretes a virulent, anto-inoculable pus. It is a malady exclusively local, never giving rise to any symptom which can be referred to a constitutional infection.

Chancroid is the least venereal of the three distinct diseases of this class, gonorrhœa, chancroid and syphilis Unlike the first of these affections, it does not depend upon sexual intercourse for its infection, but is perpetuated by contagion, and has many methods of infection apart from the union of the sexes. Of these methods of contagion that from sexual congress, by direct contact, is of course, the most immediate, and following this, contact of chancroids with abrasions on the fingers or hands, which become carriers of the poison to other exposed parts of the body. No doubt, in the greatest number of instances, contagion occurs in the progress of the sexual act; but spontaneous anto-inoculation is not only possible, but common, as any fissured or abreded surface on any part of the body is

fully capable of absorbing the virus, while instance of accidental or mediate contagion are constantly occurring in practice.

Experiment has finally demonstrated that the contagious principle is resident in the pus-corpuscles, since when these are removed, only negative results attend inoculations with the remaining fluid. Exactly what this poisonous quality is, has not yet been determined by microscopists. Salisbury, Donné and Didier insist upon the parasitic theory, but have not decided whether the parasite be vegetable or animal, and since other theorists have given their claims no greater substantiality, the problem is yet open to solution.

Many important facts in relation to the effects of chancroidal pus, however, have been definitely noted. Under all tests it has been found to be identical with pus from any other ulcer. Its poisonous power is demonstrated by the rapidity with which it will beget a chancroid, whenever and wherever it is carried within reach of absorption; as, for example, by any removal of the cuticle or external layers of epithelium from any surface. The quantity of chancroidal pus necessary to effect contagion is not definitely determined, but a single pus-corpuscle in all probability would be found sufficient. However small the quantity involved, actual contact with the poisonous principle seems alone essential to infection. The experiments recorded by Puche, prove that absolute results are obtainable from a single drop of pus diluted with as much as three ounces of water.

As to the vitality of the poisonous principle of chancroidal pus, Boeck (oral communications) refers to the fact that it is sent from the hospitals of Christiana into the neighboring country to be employed in syphilization. To this end it was probably kept cool, and transported in tightly-corked bottles. It has been shown that after having been frozen, it is, when thawed, still inoculable. This result, however, is far less certain after it has been dried. Boeck has expressed his belief, that when once thoroughly dried, it loses its virulence. But this is by no means always the case, since dried pus remoistened has been known to produce positive results. Reference may be made in this connection, to the experience of Sperino, ("Studi clinici sul Virus Sifilitico," Turin, 1863) who, upon occasion, employed a lancet which had been some time unused,

and upon the point of which some dried chancroidal pus was deposited. Sperino made three punctures with this lancet, every one of which took in due time.

We have already seen that the virulence of chancroidal pus is not destroyed, though one drop be diluted with half a glass of water. The same would be true if mixed with any indifferent menstruum, such as sweat, mucus, salina, urine, muco-pus or spermatic fluid, but this is very far from true, if the mixture be with alcohol, acids or alkalies, any of which will immediately destroy its virulence. Heat at the boiling point accomplishes the same result; decomposition is likewise fatal, and lastly a chancroid ceases to be poisonous when once attacked by gangrene.

The poison of the chancroid is auto-inoculable, it would seem without limitation. We understood by auto-inoculation the contact of chancroidal pus with some abraded part of the body of the bearer of the chancroid; in contradistinction with inoculation, or hetero-inoculation, which rather signifies the contact of the pus with the body of any individual other than the one furnishing the pus. Lindmann practiced auto-inoculation upon himself, exceeding the number of two thousand seven hundred times; and when Turenne died, his body was found covered with chancroid scars, the result of his experiments on his favorite theory, syphilization.

By this process it was thought to obtain the complete immunity of the skin to the poison of chancroidal pus. In the experiments a certain pus was employed over and over again, until it would no longer reinoculate; afterward fresher pus is used until it also fails to produce a pustule, and until at length no positive result whatever is obtainable by inoculation.

These results, however, have occasioned no small amount of misconception; while they are confidently believed by some very respectable investigators, to have proven that the body can acquire total immunity to the action of chancroidal poison, it will be found by more thorough inquiry that such immunity is temporary and not permanent. Syphilizers have themselves clearly taught that different portions of the animal body are susceptible in far different degrees to the action of this poison of a given virulence. That, for example, when the arms had failed to take, the chest could be inoculated; and when these

parts acquired immunity, the legs would be found susceptible. But when at length immunity may have been acquired for the entire body with apparent success, it is subsequently found to be of more or less limited duration, since after the skin has enjoyed a few months, or at most a year's rest, inoculation will again produce positive results.

The transmissibility of chancroid to the lower animals, has been experimented upon with various results. The fact, however, has clearly enough appeared that such transmission is entirely possible. In 1844 Auzias Turenne first successfully inoculated dogs, cats and rabbits with the chancroidal pus. In 1858 Robert de Weltz four times successfully inoculated his arm with pus taken from a cat and a monkey. While in 1851 Didaz inoculated himself on the penis with pus artificially developed upon the ear of a cat. It is reported that the ulcer became phagedenic with suppurating bubo. Experiments proved, moreover, that one animal could be inoculated with pus taken from another. Bumstead quotes Ricordi on this head, who produced a chancroidal bubo in a rabbit with pus taken from the chancroid of another rabbit. While, therefore, animals are susceptible to these inoculations, perhaps as a rule it must be conceded that they receive chancroid in imperfect degrees, and often will not take the disease at all.

As already expressed, contagion from chancroidal poisons may be defined as immediate and mediate. The first is the product of direct contact, either in sexual congress, or in handling chancroids at the time when some abrasion or fissure is on the hand. The mediate method is by the medium of some intervening agency, as for example, inoculation by scratching any abraded surface of the body with fingers that unconsciously carry a sufficient quantity of pus in a dry state or otherwise.

It is very apparent that accidental inoculation may occur at any time, when simply any abraded surface of the body should by chance come in contact with the virus. Auto-inoculation also, is not infrequent where one having a chancroid, handles the same with fissured hands, or in any way conveys the pus to any portion of the body, where the skin might happen to be cut or abraded in any way. But in the great majority of cases, of course, immediate contagion is occasioned during the act of coition. Mediate contagion, moreover, may likewise oc-

cur in sexual intercourse. Many cases are recorded where a woman with a healthy vagina, receiving the virus from one man shortly afterward conveyed it to another, while she herself escaped in toto. A man with a long prepuce, and suffering no abrasion of any kind, may in like manner perform the intermediate part of conveying the poison from one woman to another, and because of washing himself after the last encounter, may altogether escape infection.

As to the length of time, chancroidal pus will lie in the folds of a healthy vagina, or prepuce not having abrasions, without being absorbed, testimony somewhat differs. That it may lie some little time with safety, has been proven by several experimentors. Cullerier's cases, ("Quelques Points de la Contagion Médiate," Mém. de la Soc. de Chir.), are familiar. In these cases chancroidal pus from the groin was deposited in the vagina, the latter showing no abrasions, and its secretions being inoculated with negative result. In one case the pus was left in the vagina thirty-five minutes, in the other nearly an hour; the patients, ignorant they were the subject of experiment, were made to walk about, closely watched. Finally, some of the vaginal secretion was again collected, and successfully autoinoculated in both cases. The vagina was thoroughly washed out with an astringent solution, and did not become ulcerated in either case, although the poisonous pus had remained for some time in contact with its walls.

We are by no means furnished evidence, herewith, that chancroidal poison *cannot* be absorbed except through a fissure or an abrasion. This may be largely true, so far as the hard epithelium of the skin is concerned; for sufferers from chancroid have been known to handle them with impunity. But it must be remembered that there are parts of the body where the skin is thinner and more susceptible. After intercourse with a woman having chancroid, a man, having no suspicion, may neglect to properly wash himself. There may have been no abrasions whatever, but a slight quantity of pus has secreted itself about the frænum on the surface of a thin, moist membrane. It is evident that not many days will intervene before the virulence and acidity of the pus will corode its way sufficiently deep for absorption, and two or three days later a chancroid appears. We here have a natural explanation to the uncommonly long

period of incubation occasionally met with, and of the further fact that chancroidal pus does not essentially and always require an abrasion in order to be absorbed.

As between chancroid and syphilitic chancre, hospital observation proves that the former is by far the most common disease. From ten years' statistics at the Hospital du Midi, Puche finds eighty per centum of chancroid cases, and other like statistics give a decided majority in favor of chancroid. The statistics of private practice, however, afford different results, and we find ourselves face to face with the fact that the syphilitic chancre is to be met with most frequently among the higher classes, the chancroid most frequently among the lower. Explanations of this need not be be entered upon in detail. The poorer classes, in a word, are naturally forced to cohabit with old prostitutes, who, having long since had syphilitic chancres, have passed the period when they are mediums of this disease, while they are possessed of chancroids which they take little pains to destroy. Upon the other hand young prostitutes, sought after by the wealthier classes, are least concerned by having a syphilitic chancre, which being painless, is thought to be of little consequence, but are far more alarmed by the presence of the chancroid with its inflammatory bubo, and will give over their profession for the sake of curing the latter, when they will less promptly do so to cure the former.

Alluding to the multiplicity of chancroids, Barie (An. de Derm. et de Syph., No. 5, 1874,) declares that in the female statistics prove, that in one-fifth of a given number of cases, the lesion will be unique, while in the balance there will be more than one, the number oftentimes being very large. A series of observations made at Lourcine at the instance of Fournier, shows that out of 170 women having chancroids, in 134 the number of ulcers was variable, and in 36, or one-fifth, it was unique. In certain of these cases the number of chancroids was surprisingly large, one case particularly affording as many as seventy-five! This investigator alludes to the peculiarities of conformation of the female genitals, and of the common want of cleanliness as being the responsible causes of the multiplis city.

The situation in which the chancroid is most commonly found, is that of the genitals. Indeed it was not long since

stoutly maintained that chancroid could not appear upon the face or about the head. But this belief has disappeared in the light of recent investigations. Puche, Rofeta, Bassereau, Boeck and many others have furnished conclusive proof that distinct chancroid may find lodgement about the face. Auto-inoculation will give positive results in the same situation, and syphilizers while pursuing their experiments, have proven that there is no portion of the tegumentary expansion whatever, but what can be inoculated successfully with chancroidal poisons as distinguished from the syphilitic. It is, however, worthy of remark that different parts of the body are subject to inoculation in different degrees of violence. Chancroidal inoculation takes with least positive results upon the cheeks or about the head, the ulcerations being generally shallow and comparatively of short duration. The results become more positive, as advance is made to the chest; next to the arms, and finally to the thighs, where results are obtainable after all other portions of the body have realized immunity.

SYMPTOMS AND COMPLICATIONS OF CHANCROID.

Unlike syphilis chancroid has no period of incubation. For immediately succeeding inoculation the virus begins its action and promptly advances to the stage of ulceration. This is equally true as concerns artificial inoculation and that acquired by sexual intercourse; this last being a leading characteristic distinguishing chancroid from the syphilitic chancre.

Inoculation artificially made, furnishes a convenient means of noting the progress of the chancroidal ulcer. Twenty-four hours succeeding such inoculation, it will be observed that surrounding the puncture is a faint red blush, which on the day following is developed to a distinct areola with a greater or less degree of inflammation. Pustulation often appears also on the second day, though this manifestation more frequently appears on the third day, when the areola, somewhat enlarged, will be found to have in its centre a vesica-pustule. Should this pustule now be broken, there will always be discovered beneath it a small, but regular, chancroidal ulcer. If undisturbed, this miniature chancroid will break of itself a few days subsequent

to its first appearance, having become an ecthymatous pustule about equal in size to a split pea. This ulcer, which is a true chancroid, may increase to the size of a silver shilling, but, retaining throughout its circular form, it arrives at its stationary growth as a rule when under the size of a half dime.

Inoculation by sexual intercourse is likewise prompt in reaching the point of ulceration, requiring as before remarked, no period of incubation or hatching. As sometimes happens when the virus is forced to corrode its way through the epithelium, a week (very rarely more) may intervene between the sexual act and the first manifestation of the chancroid. As a rule, however, the ulcer makes its appearance on the third day after suspicious intercourse and presenting the following admirably described characters: "a rounded, sometimes oval margin, abrupt, perpendicular edges, looking as if they had been cut out by a sharp-edged punch, sometimes everted. The ulceration is rather deep considering its extent; in very rare instances, shallow, like herpes; the bottom is irregular, velvety, grayish-yellow, covered by a pultaceous, adherent substance, resembling false membrane, or wet wash-leather, composed of partly destroyed elements of the skin, and pus, with perhaps some irregular pale granulations. The whole is usually bordered by a pink areola. Under favorable circumstances, there is no surrounding inflammation, there is no hardness under or around the ulcer, which rests on a perfectly soft base. The suppuration is abundant, thick and creamy, mixed with organic detritus, not generally tinged with blood. There is little or no pain." This description, it should be remembered, relates to a type case only, which has been in no sense disturbed or inverted from its natural course. This course includes a period of increase, ranging from one to fourteen days, arriving at the end to an average size of a silver three-cent piece, or a diameter of about a quarter to a third of an inch. Here the ulcer remains, undergoing no apparent change, through a stationary period, sometimes a fortnight in duration, though usually less. This period, however, is not invariable, for repair often promptly sets in, when the ulcer arrives at the usual size. This final period is marked by a more creamy condition of the pus, the edges slope and indications appear of a clearing up of the cavity

of the chancroid. Lastly the cicatrix is formed tending from the edges to the centre.

A great deal of discussion has been given the question in the past, as to when, if ever, during the progressive stages of repair, the secretions lose their poisonous quality. The old, stoutly maintained belief, that as repair advanced the pus lessened in virulence, until it ceased altogether to be poisonous, has been totally destroyed by modern investigation. Fournier has more forcibly proven than any other, perhaps, that while with advancing repair the degrees of virulence are calculated to decrease somewhat, yet at no period during the actual existence of the ulcer will its secretions fail to be anto-inoculable. Fournier declares, that even from chancroid almost cicatrized, he has produced positive results by anto-inoculation.

Two exceptions to this interesting fact, however, demand attention. The first of these is that when the chancroid is attacked by gangrene, its secretions then cease to be contagious; and, second, chancroids that have acquired great age and size, having for years been prevented from healing by irritating and other causes, occasionally lose their poisonous qualities and assume the simple characteristics of chronic ulcers.

Chancroidal and syphilitic contagion is believed to have an occasional origin from menstrual blood or to that issuing from fissures, since it is a well known fact, that men not infrequently contract syphilis from women upon whom no ulcerating lesion is to be found. It may be said, in support of this view, that the contagion of women often results from syphilitic blood, coming from chafes or fissures in the male. One of the earliest instances quoted by Waller as tending to show the contagious character of syphilitic blood, was a cause in which contagion resulted thus in a wife from her husband. Within a few years, also, Maurice reports a very convincing similar case. Hyde also thinks that purulent discharges from the vagina and uterus may communicate syphilis. Alluding, also, to a purulent discharge, which in early secondary syphilis issues from the penis, he thinks it may be called syphilitic gonorrhœa, and that it may, circumstances being favorable, convey syphilis. It may be interesting to remark in connection with this last subject, which is not generally spoken of in the books (by many being overlooked), that according to the observation of the reporter,

who has studied it carefully upon a number of subjects by means of the microscope,that the discharge is simply the result of an ephemeral congestion of the mucous membrane of the urethra. The condition giving rise to it is similar to that observed in the pharynx, but is more severe in the urethra than in the latter part. The discharge is not the result of any ulcerative lesion, such as the mucous patch, but the appearances observed are similar to those of simple urethritis. In some cases it has been observed to begin spontaneously; in others a remote gonorrhœa has been thought to predispose to it.

Morgan in a measure goes back to that doctrine of Carmichael, to the effect, that various forms of syphilitic sores have different sequelæ or manifestations. His views differ, however, in certain particulars. He is a disbeliever in the doctrine of dualism, and while he acknowledges that constitutional manifestations follow an indurated ulcer, he thinks, that milder constitutional symptoms follow the non-indurated sore. He says, that he often sees soft *patchy* sores in the male, followed by general infection, and he thinks, that the syphilitic sachexia, induced by such a lesion, is milder than when following a hard sore. He alludes to the fact, that induration is usually wanting in the infecting chancres of women, and states, that he, as well as other observers of large experience, always entertain a reservation in pronouncing upon the syphilitic character of a given sore in the female. His view of the origin of the peculiar syphilitic soft sore of the female is, that it is the result of a worn out syphilis (if we may thus term it) in women, who have led a degraded life, cohabiting for years with soldiers. He terms this condition as that of "women having fallen to the lowest order, and who have been saturated with the syphilitic tint. He reiterates his old statement, that if the secretion of such sores is inoculated upon their bearers, *typical chancroids* are produced. This result, he thinks, demolishes the doctrine of dualism. It may be well to state, that he supports his view by the fact, that he can (as can others, who have done the same) produce ulcers upon syphilitic persons, appearing in all respects like chancroids; by the inoculation of the purulent discharge from the genitals of a syphilitic woman who has no ulcerating lesion. It may be here stated, that the fatal and lacking point in his theory is this, that he has never, with such

pus, produced in a *non-syphilitic subject a chancroidal appearing sore*, which was undoubted in all characteristics, and which was followed by syphilis. If he could establish this point, he would demolish dualism entirely, but he has not done so. It is to be suggested to those who read these remarks made by Morgan, particularly to those not extensively read in these matters, that they only hear from him one side of the theory, and that one of prejudice, and that if they will follow the reading of his article by a perusal of Fournier's chapter upon the induration of chancres in the female, in his work upon syphilis studied in the female, it will be seen clearly, that what are considered by Morgan as objections fatal to the dualistic, are readily and forcibly accounted for, and that, in reality, there is no foundation for such objections, if cases are skillfully and scientifically studied and observed without prejudice.

Three illustrative cases of cephalic chancroids, which came under his personal observation, are reported with circumstancial minuteness by Profeta. They ran a chronic course, were serpiginous in character, and produced much deformity. The interest, besides the diagnostic consideration, of these cases, is very great in the weight, which they carry with them against a theory once larger entertained, that there was an immunity of the cephalic region to chancroid ulceration. The reporter, a few years ago, detailed a case in which a chancroid in an active stage was observed upon a cephalic region. The grand result of the publication of all of these cases is to prove beyond any doubt, that the integument of the head is almost equally as susceptible as that of any other part of the body to this form of ulcer.

An important issue in syphilography is involved in the question, as to whether a chancroid in a syphilitic subject is capable of communicating syphilis to a virgin soil. De Meric has lately brought forward cases which he regards as illustrative of certain peculiar modes of transmission of poisons from husband to wife. In general, he thinks, that the wife is contaminated through the offspring rather than by direct contagion, by means of some secreting lesion The cases are interesting, as showing what is regarded as peculiar by some observers. Case first is that of a man, aged 28, who had syphilis, and who for four years, having recurring lesions, underwent

treatment. In the following eight years he had necrosis of the maxilla. He had then been married about ten years, during which time his wife escaped contagion and bore fine children. At this time he had an impure coitus, and ten days after cohabited with his wife. Two days after, he noticed a little irritation of the prepuce, which, being neglected, took a phagedenic character. The wife, in less than two months, developed syphilis, which ran a very severe course. De Meric thinks, that the chancre was of the soft variety, and that the case of the wife bears evidence in favor of the question here involved. Unfortunately for this observer, however, the question is far from settled by the illustration here afforded. De Meric says, the sore was of the size of a cherry stone, from this we would infer, that it was a nodule. It is certainly within the bounds of probability, that the lesion was an ulcerating tubercle, caused by irritation. It is, according to our opinion and experience, and to that of others, not uncommon to see ulcerating lesions develop upon syphilitic subjects, particularly upon their genitals owing to irritation. We have seen such follow chafes, fissures and herpetic ulcers As the patient of De Meric was undoubtedly syphilitic, the disease retaining its violence for an uncommonly long period, it is fair to assume, that the course suggested was the true one observed here. Such lesions are equally as contagious as are the initial chancre or mucous patch. The description given by De Maric is therefore more in accord with a relapsing tubercle than of a soft chancre. Then, again the false recurring chancre of Fournier is sometimes developed under such circumstances, and this lesion might have been an example of that rare manifestation. The next case is as follows: A man whose wife is four months pregnant, comes under treatment for an indurated chancre of the prepuce. His illicit intercourse took place on the ninth day of the month, and from the sixteenth day for four weeks he had cohabited with his wife. At the latter day he experienced painful coitus, which caused him to apply for relief. The lesion of the husband was found to be simply a syphilitic chancrous lesion, with very slight secretion; and the important and interesting feature, according to this inquirer, is that contagion should result from such a small amount of secretion from a lesion, which was so small, as to pass for some time unperceived.

The last case is not clear in one point. A man has intercourse, without contamination, with a woman for a number of years. She is found to be syphilitic. After the lapse of several years, the man is troubled with swelling of the cervical glands and difficulty of swallowing. On examination of his throat, there was much inflamation found, and the left tonsil was seen to be hard and swollen. Shortly after, secondary lesions were manifested. Dr. Meric did not find any primary lesions on the genitals, and concludes that contagion took place on the left tonsil; but he does not offer an explanation of how it probably occurred, though the wife at one time had had secondary lesions about the velum and tonsils.

Whatever the method of contagion, immediate or mediate, and however great the variety of manifestations, the inoculating chancroid virus is fixed, and not volatile and *actual contact* under all circumstances is absolutely essential to infection. As before intimated, the possibility of accidental or mediate contagion is ever present, and while examples are not common, yet they occasionally occur as on the hand of the accoucheur, since any slightly fissured or abraded surface of the body will promptly imbibe the virus. The rule nevertheless remains that chancroidal contagion takes place during the sexual act: but need not necessarily be immediate, no mediate contagion is entirely possible as previously described.

The common cause of chancroid, heretofore described, is far from being constant in its manifestations, but admits of many variations from the natural type. (1) as to *shape*.—The round and oval forms most familiar to the practitioner, may be changed to the peculiar shapes of a wound following inoculation: or two chancroids, having coalesced, may produce irregular shapes; or, advancing on one side, the ulcer may cicatrize on the other; or, lastly, among other causes, gangrene or phagedena may produce a great variety of shapes. (2) as to *size*—The chancroidal ulcer varies in its proportions from the size of a head of a pin, to a surface of several square inches. (3) *number*.—Usually chancroid is found to be unique, but it is capable of considerable multiplication. Sometimes chancroid is multiple at the first, when, during the sexual encounter several abrasions are simultaneously inoculated; auto-inoculation is also capable, of course, of increasing a unique chancroid to any extent. Sperino

speaks of inoculating in eighty places at once while practising syphilization. In these experiments the ulcers obtained were generally small, a rule that usually obtains when chancroid is multiple.

(4) *duration.*—All things being equal, the rule is, the larger the chancroid the slower in the repair. Those located on the meatus urinarius, more or less subject to the irritation of the urine, are unusually slow in healing. Gangrenous sores are susceptible of some months' duration, while chancroids of the phagedenic serpiginous type may continue for many months, and in rare cases for years. Upon the other hand, an untreated chancroid hardly ever lasts less than a month.

Old chancroids, partly cicatrized, especially those of the rectum, may not only be kept open for years because of local irritations, but, as sometimes happens, may never heal up at all. This is likewise true of old chancroids in the female vagina; though in all of these types the secretions in the course of time entirely cease to be inoculable. Boys de Loury et Costilhes has devoted especial attention to this subject, and has described its stages with exhaustive minuteness. The ulcers are often surrounded by cicatricial tissue, are painless and attended with little or no inflammation. Their refusal to heal is owing to the conditions of the patients, who are generally broken-down prostitutes, middle-aged or past, and who are in many cases syphilitic. The base of the ulcer is hard, and by general motion and contact of urine, the sore is kept constantly open. It has been remarked in this connection, that these ulcers in the female vagina are not infrequently confounded with tertiary syphilitic serpiginous ulcers; a distinction, indeed, that is apt to deceive the most skilled practitioner, unless the history of the case be truthfully given and attentively considered.

(5) *pain.*—As previously stated, chancroid may be almost entirely painless, provided it be undisturbed. So very slight an irritation, however, occasions pain, it may be stated, speaking clinically, that pain is not altogether absent, but is sufficiently present to afford an important diagnostic symptom, distinguishing the chancroidal ulcer from the syphilitic chancre. Fournier insists that even cold water is a decided irritant, as are also the most simple dressings, all of which may cause immediate pain; other causes may be found in contact of urine; in

friction where the ulcer is located on the end of the penis; in erections which distend its edges, and in the presence of pus surrounding the ulcer. The severity of pain is rarely very great, save during a rapid advance, when the ulcer is attacked by gangrene or by phagedena.

(6) *The base.*—A soft base is that upon which the chancroidal ulcer generally reposes when free from irritation. When disturbed, however, to the point of inflammation, a more or less extensive induration is occasioned. Herewith we have another mark distinguishing the chancroidal ulcer from the syphilitic chancre, since the hardness provoked by irritation is always accidental and never a natural manifestation. The base of nearly all lesions common to the genitals, herpes, abrasions, excoriations, etc., are likewise susceptible of induration if subjected to much irritation. The occasional resemblance of the hardness of the chancroidal base to syphilitic induration, will be distinguished by the observant practitioner. In the former instance the hardness is of an inflammatory type, the tissues are seemingly matted and glued together, while the indurated edges gradually lose themselves in the surrounding tissues, contrary to the characteristics of syphilitic induration, wherein the edges are apt to end abruptly. There are yet further points of difference, as for example there is more pain on pressure in the former ulcer; the induration rarely if ever precedes ulceration, as is true in syphilitic chancre, and lastly the feel will be found to possess positive differences, the former being quite unlike the cartilaginous elastic feel of syphilitic induration. Added to the above mentioned causes of induration—friction, position, contact of urine, etc., mention may be made of the substances applied as dressings, such as caustics, whether acid or alkaline, nitrate of silver, chromate of potash or corrosive sublimate, which as pointed out by Pouriner, may especially produce induration if applied sparingly.

COMPLICATIONS OF CHANCROID.

Foremost among the complications of the chancroidal ulcer, must be mentioned inflammation. Inflammations affecting chancroid may be either spontaneous, as from debility or ple

thora; or mechanical, as from erection, friction, position, etc., or chemical, as from lack of cleanliness, contact of urine, ill-advised dressings, and many other causes. Both phimosis and paraphimosis are now and then encountered with chancroid; lymphitis will be found to occur occasionally with œdema of the prepuce, and sometimes of the entire penis; erysipelas is entirely possible, while discharges having a tendency to retension, predispose to sloughing and phagedæna.

The fact is already anticipated that a chancroid attacked by inflammation, immediately becomes painful; its edges indurate, and its secretions grow thinner and more bloody, while the ulceration gradually increases in depth. A suppurating bubo very frequently attends an inflamed chancroid. In the thickness of the prepuce, abscesses are liable to form, open, and remain indefinitely fistulous. When there is an attack of phimosis, pus is not infrequently retained, and sometimes burrows a narrow tract, at the extremity of which an abscess will be found to have formed, which in due time opens and remains fistulous. These burrowing processes are very uncertain as to limitation, and often reach alarming proportions. Vidal relates a case where the whole skin of the penis was separated quite to the root of the scrotum. Thus the integument of any other portion of the body may undermine by a similar species of subcutaneous phagedæna.

A course of slow chronic inflammation occasionally pursues sufferers from chancroid, especially in cases where the vital energies are reduced, and the constitution generally impaired. In such instances the chancroidal ulcer is highly sensitive and painful, with undermined edges, and a hard base which discharges a thin secretion, that upon observation is found to dry into a scab. Chancroids of this troublesome type are often attended with paroxysms of feverishness, gastric disturbances and other symptoms; they are moreover susceptible of considerable increase in size, and upon occasion may become phagedenic, or continue stationery.

Second in importance among the complications of chancroid is *gangrene*. This disturbance is of two distinct varieties, the one designated as total, or self-limiting, the other progressive, or phagedenic. The former kind accompanies, or is accompanied by a more or less violent inflammation, as inflammatory

phimosis or paraphimosis with considerable tension of the parts. Where, for example, the prepuce falls into this total gangrene, the whole of it may be lost, the separation of the slough causing a sort of artificial circumcision. Moreover it is possible enough for the entire glans penis to slough away, although it may be stated as a rare occurrence, that total gangrene attacks chancroid save because of the presence of sub-preputial ulcers.

While inflammatory tension is a primary exciting cause of gangrene, there are yet other causes more or less immediate, such as alcoholism, age, cachexia, malaria or any other whatsoever, that naturally tends to the debilitating of the constitution. As may be easily conceived, the total gangrene of any chancroidal surface as absolutely destroys the same, as might the thorough application of caustic. When at length, however, the slough had fully fallen away, a non-virulent ulcer, healthy and granulating, is discovered, which enters upon repair more or less rapid, according to the vitality of the patient. "But just as an imperfect application of caustic to a chancroid only produces a partial slough, and does not do away with the poisonous properties of the sore, since the virus is secreted by all portions alike, and if any is left, the whole is repoisoned, so there may be spontaneously progressive gangrene of the phagedenic sort, attacking a chancroid not thoroughly destroying the secreting surface, and consequently not interfering with the inoculable pus." Hereupon a blackish slough is seen to form on the surface of the ulcer, which obstinately refuses to separate. Subsequently new sloughs form, often-times destroying considerable portions of underlying tissue, before they at length separate, and leave beneath them the wished for healthy surfaces. We have herewith, happily, the least common variety of phagedena, and the one which is capable of producing the most formidable mutilations which are ever found to accompany the chancroidal ulcer. The manifestations of this variety of gangrene afford very slight, if any differences when attacking a chancroid, than are observable when gangrene attacks at large. There is at the first a gray look found in the ulcer, afterward a violet, and still later a greenish-black, while the discharges gradually become thin and fetid, and the patient is caused to suffer a great degree of pain.

The second variety of gangrene is the *phagedenic* or molecular gangrene, the causes of which may be described, first, as general, and second as local. This form of gangrene as it relates to chancroid, is significant of the increase of the ulcer in size; its extension more or less considerable while yet preserving its inoculable properties. This extension of the ulcer is because that molecular gangrene is incapable of destroying the poisonous surface with sufficient rapidity to render the ulcer healthy. It has been established by Clerc, that chancroid does not commence after the phagedenic form, but after having been for a time without complications, becomes phagedenic secondarily, promptly discovering a tendency to, and predilection for cellular, connective tissue. The learned investigator, Bellhomme, ("Du Chancre phagédénique et de son Traitement." Thèse de Paris, 1862,) furnishes some interesting examples of a phagedenic serpiginous chancroid of the skin, stopping promptly and even suddenly on reaching the mucous membrane. While this cannot by any means be always relied upon, it is valuable to know that the tendency at least exists, a fact capable of absolute demonstration. It has been shown by this inquirer, that the corpus spongiosum, corpora cavernosa together with the testicles, may be upon occasion utterly laid bare by phagedena, while they themselves will be found to remain absolutely untouched.

This variety of gangrene advances either superficially or in depth, generally the one or the other, while it sometimes, indeed, advances both ways at one and the same time. The gangrenous form as above described, is at once the most rapid and the most destructive; while the secondary variety, the pultaceous, superficial or ambulant type is usually quite slow. It has repeatedly been observed that phagedena while advancing on one side, will repair on the side opposite with proportionate rapidity. Fibrous tissue and fascial expansions may be looked to, and are often very successful in opposing the onward destructive march of phagedena; but not even these may be depended upon with any degree of confidence, since it frequently happens that nothing can stay its progress, and tissue after tissue is successively eaten through, especially by the deep sloughing variety.

This common form of phagedena, pultaceous or serpiginous

(the last from *serpere*, to creep) is accompanied with very slight, oftentimes with no constitutional derangements save, perhaps, slight headache and a small degree of pain. At its approach, the surrounding skin reddens, and subsequently the borders of the ulcer swell, and then gradually undermine. The sore preserves its true characters throughout, the base often showing exuberant granulations, being more or less uneven, and covered by an adherent, grayish material. The discharge is sanious, thin and inoculable throughout, while the edges assume a great variety of characters, being at different degrees sharply cut and abrupt, then gnawed and uneven, and then again often undermined, purplish, thin and sometimes œdematous; a burning pain at the edges being indicative of the advance of the process.

The variety of phagedena before us may, and often does travel up over the abdomen, and yet considerably further, and commonly lays bare the testicles and penis. Phagedena attacks bubo, especially of a virulent type, as frequently, perhaps, as chancroid. As to duration, no definite period can be assigned to it. The untreated chronic, serpiginous variety always continues for many months, and instances are numerous wherein it has extended over years. Reference may be made to the case of Ricord, reported by Fournier, which commencing in the groin in a virulent bubo, continued to exist as an open ulcer on the knee as many as fourteen years after; the ulcer healing up behind as it steadily advanced.

The general causes of phagedena, as elaborated by Ricord and others, are intemperance, chronic alcoholism and old age combined, constituting a leading cause—digestive irregularities, imperfect hygiene, malaria, scrofula, lymphatism, scorbutis, etc.

The local causes, already somewhat related to, are lack of cleanliness, improper dressings, (as for example, mercurial ointments and the employment of fatty substances,) phimosis from the retention of pus, together with every kind of local irritation, pressure, friction, etc.

Successive relapse may attend the course of phagedena as of chancroid. It not unfrequently happens, that after the process of cicatrization is almost complete, phagedena recommences, while the entire cicatrix reopens, and all without apparent cause.

As to the existence of a special phagedenic virus, recent syphilizers have pretty well determined the question in the negative. Salneuve, ("De la Valeur semiologique des Affections ganglionnaires, "These de Paris, 1852.) Rollet and Sperino, ("Studi clinici sul Virus sifilitico," Turin, 1863), have succeeded in producing only simple chancroid, by inoculating from phagedenic chancroid. Sperino's inquiries are partially satisfactory, showing that the identical pus inoculated on different individuals, produced simple sores in some instances, and phagedenic sores in others, while confrontal examinations have often revealed a phagedenic sore derived from a simple one. As will be seen by these investigations, therefore, phagedena is not a property belonging to the pus of chancroid, but is instead an individual idiosyncrasy or property of the tissues of the patient. The writer has repeatedly confirmed the foregoing, by the results of his own private practice; the inoculations upon one individual from another (hetero inoculation) producing only a simple sore, while auto inoculation of the same pus may, and is not unlikely to be attended by a more or less pronounced phagedena. Every practitioner of these forms of disease, however, will bear testimony that oftentimes it is impossible to detect any distinctive cause of phagedena. Patients are sometimes attacked by it; when none of the local causes already specified, are in operation, and when general causes would be regarded as out of the question, because of the patient's constitutional healthfulness. Added to this perplexity is the recorded fact, that certain individuals of the colored race, have had phagedenic on two seperate occasions. It will be remembered in this connection, that negroes, as a rule, suffer more severely than whites, not only from phagedena, but also from chancroid, bubo and syphilis

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DIAGNOSIS OF CHANCROID.

Having heretofore treated of chancroid in general, it will now be our purpose to refer particularly to its diagnostic characters. The first among these is herpes, the nature of which characteristic may be defined as generally local, though sometimes a neurosis. Its *cause* has already been anticipated as residing in chemical or mechanical irritation, as from acrid

discharges; friction, such as in sexual congress, as a resultant of cold, and of certain forms of fever. Its *situation* is upon the genitals as a rule, and its commencement is marked by a group of vesicles (far more rarely by a single vesicle) which ultimately continues as an ulcer.

In points of physiognomy 1 the shape is irregularly rounded, while the borders are described by segments of slight circles left by the various vesicles; 2 As a rule the ulcer will be found superficial. Fournier states that in solitary herpes, where there is a single vesicle, the ulcer is distinctly circular; in this instance there are no neighboring patches of vesicles. The general physiognomy and base of herpetic ulceration are, in respects other than just enumerated, like those of chancroid, save that the aspect is much less virulent.

Turning to the *history* of this disease, it is found to prefer patients who have a rather long prepuce, together with a highly tender balano-preputial mucous membrane, presenting frequently a distinctive tendency to return periodically, or otherwise at irregular intervals, especially after lack of cleanliness, or caused at other times by excessive sexual dissipation.

Herpes is occasionally *auto-ino vlable*, but never without considerable difficulty, a secretion of thick pus may produce an abortive pustule, not, however, a characteristic chancroid ulcer. Its *course* does not develop a tendency to increase scarcely any upon the size at which it started, while limitation and cicatrization are generally quite rapid.

Induration is inflammatory, and may be, and often is capable of being produced by causes quite analogous to those of chancroid, its general behavior being likewise similar.

Herpes is not transmissable. Moreover the glands are quite rarely involved, it being impossible for virulent bubo to occur, although inflammatory bubo occurs at wide intervals. So also of lymphitis, the inflammatory is the only form that is possible of occurrence. The prognosis of herpes may be declared good in every essential sense, while, as in chancroid, the treatment is local.

We now turn to the second prominent characteristic, which is balanitis with accompanying excoriations, together with ulcerated and exulcerated abrasions. The nature of balanitic and other abrasions is always local, and the causes are synonymous

with those of herpes, excepting cold, fever or neurosis. The situation, like herpes, is upon the genitals, and likewise like this disease it is susceptible of no incubation. Its beginning is as an abrasion or fissure, while it continues as an ulceration. In point of number, it is as a rule multiple and confluent. In physiognomy irregular, or otherwise, resembling superficial chancroid ulcer.

Balanitic and other abrasions are found generally on patients who have a long tight prepuce, and who are uncleanly in their habits. As to the points of inoculability, course, sensibility and induration, this characteristic may be compared to herpes, save that as to sensibility it is usually more painful. It is also identical to herpes as to transmissibility, phagedena, (very rarely possible,) bubo, lymphitis, prognosis and treatment.

Among other lesions, the ulcerated mucous patch very rarely presents the same depth of ulceration as syphilitic chancre. Neither has it a like tendency to spread, although it is disposed to coexist with other similar lesions located upon the mouth or anus. It is satisfactorily determined that discharge from mucous patches is at least in slight degrees auto-inoculable, but comes far short of producing typical chancroid.

Finally the diagnosis of chancroid is with simple ecthyma, ulcerated tertiary) tubercular syphilide of the prepuce, or glans pains and epithelioma. Tertiary syphilitic ulcerations of the prepuce or glans penis not infrequently resemble chancroid with such a marked sameness, that there is not wanting any physical characteristic. It will be often found, however, that the base and edges are harder, the ulceration considerably more irregular in its outline, while the tendency is more pronounced to eat deeply, with less pain and inflammation. As to the discharge, it is not auto-inoculable. Local inflammation with consequent suppurating bubo, or sometimes even lymphitis, may attend any one of these several lesions. "But, in any case, if a bubo suppurate, and its pus be found auto-inoculable, it has derived its origin with certainty from a chancroid, and from a chancroid only. In any case of doubt, in presence of a suspicious sore, there remains one infallible method of diagnosis: namely, auto-inoculation."

A further characteristic deserving attention in this connec-

tion, is epithelioma. This disease may attend both the prepuce and the glans penis commencing usually upon the latter. It may be defined as a slight, flat, often warty, but as a rule simply an excoriated surface, the base at the first being somewhat indurated. It will be seen that the surface of this induration, seemingly insignificant, promptly becomes excoriated, is disposed to bleed slightly, and is the seat of more or less pain.—A scab forms of a dark color, particularly if the spot is exposed to the air, but this, when it has fallen off, discovers an ulcerated surface beneath. It is herewith perceived that the disease advances by ulceration backward, involving everything in its course. The discharge is thin, sanious, fetid, while the ulcer will be found irregular, deep and unhealthy. At first its course is slow, but later becomes more rapid, and forms a parallel to epithalial cancer, as it affects other localities. The advance of the disease occasions decided loss of strength; the inguinal glans on either side become involved, sometimes so seriously as to ulcerate. Dependent upon the degree of the patient's strength, the disease may spread from the root of the penis over the abdomen, thighs, groins and perinæum, and even involve the anus. Instances occur, moreover, where the scrotum ulcerates away, leaving the testicles hanging utterly exposed. In yet other instances the sufferer dies from hæmorrhage, some prominent vessel of the perinæum having been opened by the ever-advancing ulceration. In diagnosing epithelioma, the warty excrescences which discover any induration at their bases, should be regarded with great suspicion and care, particularly if the patient be past middle life, and be found of uncleanly habits.

We may here refer with no little value, to the cases of ulceration upon the cephalic region reported by Venot, and which he not improperly believes to be of chancroidal nature. The rarity of undoubted cases, as well as the significant question as to whether all auto-inoculable ulcers found in this region, are to be regarded as chancroidal, call for the report in full of all such cases. The first is that of a prostitute, aged nineteen, who having had no antecedent venereal disease, had, a year previously, an abscess of the labium majus. She consulted Venot for an ulceration of the border of lower lip, of twenty days' duration. It was nearly round, of a diameter of one and

a half centimeters, with sharply cut red edges, grayish base and secreted much sanious pus. It presented no induration, and appeared like a chancroid. A single submaxillary ganglion was swollen and tender. She was cured in about a month by local treatment, without any suppuration of the ganglion, and afterward did not give any evidence of syphilis. The second case was that of a man who, after some impropriety, noticed a sinuous ulceration of the left labial commissure extending to the integument beyond. It commenced by a slight papule, which becoming excoriated, was touched with spirits of camphor, by which it was much inflamed. The patient, an intelligent man, somewhat read in medicine, went to Venot in great fear, saying that cephalic chancres were always of an infecting character. There was considerable suppuration, but no induration, and a ganglion in the parotid region was enlarged and tender. To appease the anxiety of the patient, auto-inoculation upon the right thigh was practiced with success. The resulting ulcer is said to have presented all the appearances of a soft chancre in about seven days. The mind of the patient was thereby much relieved. Venot states that his father submitted a case of soft cephalic chancre to Ricord many years ago. This statement has been commented upon as somewhat singular, as the case of the elder Venot was pronounced by Ricord to be one of lupus, and not of chancroidal nature. The diagnosis of the latter is very clearly given in his work. (Lecons sur de Chancre, Paris 1860,) to which the student is referred.

An interesting case of herpes detailed by Kaposi, is well calculated to illustrate the effort above made, to describe this characteristic. In the case before us the disease was principally located upon the right arm, and its anomalies were as follows: the peculiar method of development of the individual groups of efflorescence, circles of new vessels constantly forming about the drying or crusted central eruption, after the manner of herpes circinatus, until the whole patch reached the size of a half dollar: the arrangement of the vesicles and crust in the form of long streaks, which extended by the peripheral development of fresh vesicles: the peculiarity that these stripes and groups did not correspond in their long axis to the course of direction of the cutaneous nerves, but ran either transversely to, or crossed it more or less: the uniform progress of the erup-

tion from the periphery of nervous distribution toward the nervous center: the extension of the zoster across the median line, and from the region supplied by the first and second intercostal nerves to that belonging to the third and sixth: and lastly to the recurrence eight weeks after the disappearance of the affection, of an eruption of exactly the same character. It was also remarkable that the new efflorescences appeared in many places upon portions of the skin which were marked by pigment deposit, as seats of the former attack. In connection with a long series of observations upon the modifications of sensibility in the various affections of the skin here recorded, Rendu (14) expresses the following conclusions with regard to zoster: That there constantly exists, in zona, disturbances of sensation which are peculiar to it. No other affection, except it be pemphigus, which seems to him to be closely allied to zona, presents a similar combination of anæsthesia and hyperæsthesia, showing themselves simultaneously at points where the eruption is most intense. There is, in fact, a double phenomenon: On one side an inflammation of the skin, which manifests itself by hyperalgesia and hyperæsthesia: on the other a neuritis, which produces in certain nervous filaments an augmentation of sensibility, in others, a temporary abolition of the power of sensation. This painful anæsthesia, as it has been called, is by no means a special phenomenon of zoster, but is met with in all neuralgias. It has been frequently observed in sciatica and facial neuralgia. In zona it is not, therefore, the result of the cutaneous afflorescence in itself, but of the neuralgia of which the eruption is only an "epiphænomenon." The study of the alterations of sensibility in zona furnishes, therefore, a new and indirect proof of the theory, that both the cutaneous and neuralgic manifestations of the affections belong to the class of disturbances called tropic.

PROGNOSIS IN CHANCROID.

It may be considered as fairly determined, that chancroid is not dangerous to life, save upon rare occasions where complications of a serious nature arise, such for example, as extensive sloughing phagedena, erysipelas, or by the excitation of a

violent peritonitis. There are serious enough effects, however, following in the wake of chancroid. Cicatrices of a more or less extensive nature left by phagedena, may prove subsequently very troublesome by a tendency to contraction; while the penis may be, and often is quite destroyed by phagedena, which, practically speaking, unsexes the patient. Moreover a more or less serious stricture of the urethra inevitably follows chancroid of the urethral canal. Permanent phimosis may also be produced by the cicatrices of chancroidal ulcerations at the orifice of the prepuce. Adhesions more or less extensive of the prepuce to the glans penis, often occur after violent chancroidal phimosis, and the same have been known to occur, indeed, after the simple inflammatory form. Finally chancroids of the pockets on either side of the frænum have been found upon occasion to have eaten quite through the urethra, resulting at last in artificial hypospadias.

TREATMENT.

Little can be said of the prophylactic treatment of chancroid. Usually the disease has far advanced beyond the abortive measures that would have been instituted by the surgeon, before it has been presented to his notice. The fact is fully established, however, that such abortive treatment as might be applied to chancroids acquired naturally, is not equally effective as against chancroids artificially produced by inoculation. According to Rollet, the development of chancroid may be prevented by application of the stronger mineral, as well as some of the vegetable acids, also by caustic alkalies and certain of the salts, such for example as the chromate of potash, sulphate of iron, sufficiently diluted as not to attack the epidermis. This local application in order to be effective, must be made within a period ranging from six to twenty-four hours after inoculation, and should be repeated for about the space of two hours. The rule is that the longer the time which has been suffered to elapse after inoculation, the longer must the preventative solution be locally addressed. Rodet agrees with Rollet, that a concentrated solution of citric acid yields the very best obtainable results.

In the treatment proper of chancroid, nature's method of immediately destroying, by total gangrene, the poisonous character of the sore, is the true one to be employed in practice. In other words, the entire destruction of the ulcerated surface by an effective escharotic, will be found the only course which will yield the most satisfactory results. There are many effective caustics, particularly those of a decidedly active nature, which may be employed; but three among them all may be recommended as being easy in management, and at the same time productive of the least possible pain to the patient. These are sulphuric acid, nitric acid and the red-hot iron. While the last of these is usually found most repulsive to the patient, and the one most seriously to excite his fears, it is in reality the least painful of all. Caution should be given the practitioner, that the caustic alkalies are liable to deliquesce, and are both more painful and more unmanageable than the acids. Great care should be taken in the application of caustic, to thoroughly and utterly destroy every portion of the sore, as well as all existing sores, since they are sometimes multiple. This is plainly obvious, since were any ulcer secreting virus be permitted to remain alive, it will lose no time, and fail never to reinoculate the surfaces, more or less raw, left by the separation of the eschars, the result being simply the creation of other chancroids by auto-inoculation, usually larger in size, and often-times more numerous than the original sore or sores. Too much stress can hardly be put, therefore, upon the necessity of performing cauterization thoroughly, if it be a decision to do it at all. Every portion of the ulcer, no matter what its size, must be effectively burned the same, being true of every sore accompanying. Cauterization however, is subject to limitations. Should subpreputial chancroid be attended with phimosis, the burning of chancroids of the preputial rim is not only unadvisable, but would be an act of most apparent folly. No higher recommendation, indeed, may be made of the act of burning sores on the glans or prepuce, in the presence of urethral chancroid.

The practitioner will observe the importance in the application of nitric acid, of thoroughly cleansing the ulcer, and then drying it, whereupon a single drop of nitric acid may be placed upon its surface with any pointed instrument. The operator

should allow the surface thus applied to dry, waiting until the pain has nearly or quite ceased, and thereupon, if he desires to insure his success, apply to the dried surface of the ulcer yet another crop. Since there is a possibility that some slight portion of the acid may run over and attack the sound skin surrounding the ulcer, it is advisable always to have a piece of moist sponge at hand, with which to absorb such overflow immediately. When the second drop of acid has been well imbibed, the surface presenting a dry appearance, it may be then washed and dried, and carefully covered with dry lint. In a few days thereafter, the eschar begins to seperate, and there is found to be left a red, healthy appearing ulcer, which should be attentively dressed with some mild lotion, or otherwise, simply with dry lint. Cicatrization will follow in due time; the period varying in duration according to the size and virulence of the ulcer,and the thoroughness with which the burning was performed. It should be observed in the treatment of sub-preputial chancroids, where the patient has an uncommonly tight prepuce-that he should be enjoined to rest after suffering cauterization, lest inflammatory phimosis be occasioned.

Ricord has undoubtedly suggested the best method for the employment of sulphuric acid. His recommendation is a carbo-sulphuric paste made of pure sulphuric acid and vegetable charcoal. This paste is directly applied to the dry surface of the ulcer, and by means of a wooden spatula thoroughly pressed down into all of its inequalities. When dry, it has the appearance of a black crust, which after a few days separates, leaving a healthy, granulating ulcer, or, as happens, not infrequently, the process of cicatrization goes on beneath the scab, to the point of completion.

We have said that the red-hot iron is the least painful to the patient, of the three methods hereby advised in the treatment of chancroid. It is moreover a very simple method, if the practitioner will see to it, only that he carries his hot iron point into every existing portion of the ulcer, until there is produced a black dead eschar of the entire surface. It is necessary afterward, however, to apply a cold-water dressing to the sore, and an anodyne should be given until the pain has altogether departed.

Canquoin, and many other eminent writers, express, how

ever, an emphatic preference for nitric acid, and insist that it is the least painful to the patient, of the three methods here recommended. Certain it is, that nitric acid is the most manageable of the three, and in the hands of the young practitioner might generally be accepted as the safest and surest method. The depth of tissue destroyed by it is slight and limited, and yet quite sufficient for the purpose in hand, providing the application was properly made. Moreover, while with the actual cautery, anæsthetics are usually found necessary, this is not true in the employment of either nitric acid or the carbo-sulphuric paste.

In the treatment of chancroids, the practice of locally applying greasy substances of any kind or description, should be studiously eschewed. Ricord, moreover, is to be heartily endorsed, in regarding mercurial ointments as mischievous, oftentimes in very decided degrees. But attention should be called to the satisfaction to be derived from the use of iodoform. The odor exhaled from this drug has been foolishly made a t o serious objection to its use, and others complain of it that its use, when a large surface is covered by it, is quite painful to sensitive patients. It has been suggested on this latter head, that a dilution of iodoform with one-third of tannin, will render its application comparatively painless. Despite all objections, this drug is perhaps the best possible treatment for simple uncomplicated chancroid, when cauterization is not resorted to. Where large surfaces are under treatment, it is advisable oftentimes, to make an application of pure carbolic acid every second day. Between these, dressings should be as often changed as is necessary to the preservation of cleanliness. Weak solutions of alcohol, one part to two of water, or still better, permanganate of potash, gr. j–ij to the ℥ j, may be employed for purposes of dressing. Rest should be enjoined upon the patient, particularly if the chancroid be located near the frænum; otherwise there is danger of inflammation, or worse, the formation of suppurating bubo.

In treating sub-preputial chancroid, little change is necessary in the above, unless there be suffered an attack of phimosis or paraphimosis. In order to avoid the latter, care should be taken not to dress the prepuce back. Should phimosis intervene, renewed attention must be paid to cleanliness. To prevent an

accumulation of pus, very frequent injections of the balano-preputial cul-de-sac with tepid water, will be found indispensable. The parts having been washed, the lotions above advised may be injected, or, if preferred, Ricord's recommendation of a gr. v-xv. solution of the nitrate of silver may be used with eminent satisfaction.

Should, however, the inflammatory symptoms advance, absolute repose must be enjoined upon the patient, and when the tension of the prepuce becomes very considerable, it should be slit up on the dorsum, or Ricord's practice of circumcision must be resorted to, particularly if the prepuce be inordinately redundant. In some cases, says Ricord, I take a fold of the skin of a certain extent, and thus remove a flap, which leaves a division in the form of a V, with its basis on the margin of the prepuce, and its summit toward the base of the glans. The section of the lower part of the prepuce, after the method of Celsus, an operation which Cloquet has much improved, does not expose the urethra to be wounded more than the upper section. In most cases, however, I reject it, particularly in cases of phimosis, with excessive length of the prepuce, for it occasions a deformity similar to that seen in hypospadias.

But Ricord distinctly prefers circumcision, a method which is thus described, First Period. The penis being relaxed, without stretching the skin which forms the prepuce, I draw with ink a line which follows, in all its circumference, the oblique direction of the base of the glans, and about an eighth of an inch from it. Second Period. I next draw the prepuce forward, and fix it between the blades of a common dressing forceps, placed directly before the glans, the inked line held by an assistant. Third period. The portion of the prepuce which projects beyond the forceps, is to be held by the operator with his left hand, whilst with his right he makes an incision with a bistoury, following the line traced by the ink. Fourth period. After this section, the mucous lining, which by its anatomical disposition does not allow of its being drawn forward like the skin, remains entire, and covers the glans; to avoid a secondary phimosis or paraphimosis, it should be immediately divided. I do this by dividing this mucous membrane by a single cut with the scissors on the dorsal surface of the glans to its base; then I remove the flaps around to the frænum, and with a single

stroke, still holding the two flaps together, I remove the frænum with them.

The results of this method, if skillfully handled, are more commonly satisfactory than any other. In the space of twenty to twenty-five days, the cure is quite complete; no deformity remains behind, and the fear of a consecutive phimosis or paraphimosis is happily removed. If the artery of the frænum should bleed considerably, as sometimes happens, it may be tied, otherwise torsion should be applied. Finally the penis should be constantly covered with cold water, as a preventative both to erections and inflammation.

The fact that the cut surfaces in these operations nearly always become inoculated by the attending pus, does not at all remove the necessity. It will be seen that if the parts be not cut, gangrene or phagedena will ensue, beside which a simple chancroidal ulceration is of inferior importance. Every possible precaution should, of course, be taken, and when the prepuce has been slit up, or otherwise operated upon, it is proper to immediately cauterize all the chancroidal ulcerations found exposed, as well as the cut surfaces themselves. Since the patient is always under the influence of an anæsthetic, the hot iron had better be employed for these purposes.

BUBO.

Notwithstanding that Astrue denominates bubo as a recent symptom of venereal disease, it will be found that Guillaume de Plaissance, who wrote as early as 1343, had an almost perfect knowledge of it. The name comes from the Greek Βοο Βαρ, signifying groin, and was primitively employed to express only certain morbid conditions of the glands of the groin. In its more modern use, it is applied to inflammations, or certain enlargements of these glands occurring anywhere, but more particularly in association with lesions, commonly of a venereal nature, but not necessarily so.

Bubo may be described as of three distinct varieties. (1.) The simple inflammatory; primarily by propogation of the inflammation by continuity, without necessary regard to the particular nature of the primary affection which produced it.

whether such affection was blenorrhœa, a chancre or any other lesion; secondarily, by syphilitic reflection. (2) Virulent; the pus of which variety is auto-inoculable, and is productive of chancroid, and (3) Syphilitic.

It has been proposed (M. Gibert, manual des maladies vénériennes, Paris, 1836) that inoculation be employed as a means of diagnosis between sympathetic and syphilitic buboes; most experimentors, among others M. Cullerier, obtained nothing by the inoculation of the pus of buboes, which it was most natural to regard as syphilitic. M. Ricord, on the other hand, says he has obtained the characteristic pustule, wherever the bubo was united with chancre, or a vaginal discharge, which arose from ulcerations of the neck of the uterus. The few experiments I have made, have afforded, like those of M. Cullerier, a negative result. As most buboes in women terminate by resolution, the cases in which inoculation would be practicable, are very limited.

Of the three prominent varieties of bubo above numerated, the second, or virulent, is never found in connection with any other lesion than chancroid, its existence at any time affording convincing evidence of the pre-existence of that form of ulcer. On the other hand, the presence of syphilitic bubo, bears as absolute proof of the patient's having syphilis.

The conclusions arrived at by Ricord in this connection, are of a very interesting nature. These are (1.) That the virulent bubo, or that from the absorption of the pus of chancre, is analogous to chancre, as regards its nature, and only differs in its seat. 2.) That the virulent bubo is the only one which inoculates. 3.) That the signs which have been mentioned by all authors to distinguish virulent buboes from the engorgements with which they might be confounded, only serve in most cases to establish a rational or probable diagnosis: and that inoculation alone, can be considered as an unexceptionable and pathognomonic sign. (4.) That if, in a great many cases of supposed primitive bubo, an exact diagnosis were not absolutely necessary to regulate the treatment, and determine the prognosis of the future chances of the patient, when suppuration does exist, it ought to be tested at every period of its duration: experience having shown that buboes, which do not inoculate, when the experiment is properly made) are never followed by

secondary symptoms, and that they are therefore not syphilitic: whilst other causes, which often escape our notice, and without being connected with syphilis, may give rise to engorgements of the lymphatic system of one region of the body, as well as of another; and that it would be absurd to conclude that a bubo is necessarily syphilitic, because it appeared soon after a coition. This surgeon insists, that although after impure connection, the engorgement of the ganglions situated near the sexual organs, may very rarely become primarily diseased, yet guarding against error, and examining these engorgements attentively, it will be found that they usually appear in the deeper ganglions, and oftentimes, indeed, in those of the fossa iliaca, or at least, the subaponeurotic ganglions of the thigh; that their progress is often chronic; that they are a long time indolent, and have little tendency to suppuration; and when they suppurate, the pus from them does not inoculate: hitherto I have never found, says this writer, bubo, with all the rational signs of a primative bubo, which furnished an inoculable pus.

If this important observation be added, that after very careful researches, I have never found that a strictly primitive bubo has been followed by symptoms of general syphilis, the importance of inoculation in this case will be apparent. Moreover, as regards absorption in general, in order that the primitive virulent bubo may occur, the lymphatic vessels must have orifices opening on the mucous or cutaneous surfaces: for, according to the hypothesis, that all absorption must be preceeded by a kind of imbibition, the tissues which are impregnated with the pus of a chancre would be first infected, as this pus necessarily produces ulcerative inflammation wherever it penetrates, except in the lymphatics, when their internal membrane is entire; for, if this be not the case, we see them attacked as in the case of lymphitis, to which we have already alluded.

The diagnosis of chancroidal bubo as distinguished from the syphilitic, may be thus stated. Its nature is simple inflammatory or viralent, and as to pregnancy, it occurs as a rule about once in three cases. Wherever located, a single gland only is usually involved, never occuring in a group: but, in the groin, may be bilateral. Its appearance is irregular as to period, and no induration attends same, only an inflammatory

hardness. The general inflammatory appearances are marked; the skin becomes adherant and red, the gland feels hot, and there is more or less pain. The termination is generally by suppuration, though sometimes by resolution. The virulent variety always suppurates, becoming an open chancroid ulcer. The pus of an inflammatory bubo is not auto-inoculable, but that of a virulent bubo is invariable so. The virulent abscess, therefore, becomes a true chancroid, and like chancroid, may extend and become phagedenic. As to time, the natural duration of bubo may again be likened to chancroid itself, continuing for weeks or months, and finally, should it become phagedenic, may linger for years. From the foregoing it is at once perceived, that prognosis is good for the inflammatory variety, but less so for the virulent, particularly if it degenerates into phagedena.

While bubo is most frequently situated in the groin, it is by no means invariably so; but may appear in glands that receive the lymphatic trunks distributed to that portion of the body, in which the exciting cause may occur. Or it may appear under the jaw, in the axilla, in the epitrochlea gland, etc., the fact that it most commonly appears in the groin, is simply because its exciting cause is as frequently situated on the penis. As a rule, the seat of bubo will be found in the central gland or glands of the inguinal chain, and on the same side with the lesion (chancroid). It, however, frequently crosses on the other side; or may be double from a single sore; instances rarely occur, where a simple bubo appears on one side, and a virulent one on the opposite. The first group of glands receiving the lymphatics from any part, are the only ones that encounter bubo; the glands following the first group, escaping always, whether the bubo is of the simple variety or the virulent. As to time of appearance, as between the simple and virulent types, the former appears the earlier, usually before the thirteenth day; but when the virulent variety does not appear, it advances far more rapidly. Puche speaks of a virulent bubo, which appeared after three years' duration of a serpiginous chancroid. Bubo of either the inflammatory or virulent types, may be attended by granulations, and thus attacked, become a so-called vegetating bubo.

E. N. Fishblatt, M. D.
133 East 36th Street, New York.

CHLORATE OF POTASH,

As a specific in Diphtheria and Pseudo-Membranous Croup.

Dr Seeligmueller, of Halle, (Prussia,) in an article published in the London Medical Times on *Chlorate of Potash* as a specific in Diphtheria, gives in detail his experience as a hospital physician in treating Diphtheria, and his wonderful success in speedily arresting its progress by employing a saturated solution of that salt. His testimony is, that Chlorate of Potash is as much a specific in this disease, as Quinine is in intermittents. He advises that after the first administration of the saturated solution, drinks must be withheld, to avoid washing the medicine away too quickly from the fauces. "The first effect will be a disappearance of the fetid breath. The deposits will gradually diminish, and above all there will be a rapid amelioration of the general condition." "Children," the writer says, "whom I found in the evening, when I was called in, reduced by exhaustion and fever, the next morning were sitting up in their beds, fresh, and without fever, demanding food and playing."

Dr. Seeligmüller concludes his report with the subjoined summary of his experience: "The Chlorate of Potash administered in a saturated solution, has a specific effect on diphtheria. It must be given in a solution of 10 grammes in 200 grammes of distilled water, without adding any syrup or any other substance to ameliorate the taste. This solution is to be ordered to infants under three years, at half a spoonful every two hours, (if the malady is very grave, every hour,) at first day and night without interruption. This internal medication alone will suffice in all cases. The saturated solution of Chlorate of Potash exercises a topical action, and a general one on the diphtheritic process; a topical one as a mild cautery, and by separating the diphtheritic pseudo-membranes from their basement membranes; a general one, in supplying the oxygen withdrawn from the blood corpuscles by bacteria, and destroying these organisms. CAUTION is required, lest the saturated solution may act dangerously on heart or digestion. When such symptoms occur, the administration must be suspended."

It ought to be added, to give authority to the foregoing, that the chlorate was administered, in the way directed, to a great number of both hospital and private patients.

We ask attention to the above experience of Dr. Seeligmüller, as we are confident, physicians will appreciate the advantage Chlorate of Potash Tablets afford, enabling him to give the patient the benefit of a stronger local action of the salt than would be possible even with the saturated solution, which contains but five per cent. of the salt, allowing but a momentary contact. The almost entire absence of taste admits of their being given even

to very young children who hold the tablets in their mouths until dissolved. By that means they serve as a continuous gargle, exerting its influence upon the membranes most affected.

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OF

CHLORATE OF POTASH.

In an exhaustive and interesting paper read before the Philadelphia County Medical Society, by Thomas M. Drysdale, M.D., (published in the *Medical and Surgical Reporter* of March 17th, 1877,) he gives a detailed statement of results of the administration of this salt. His experience in the treatment of very many cases, induces him to claim it as almost a specific in Diphtheria and Pseudo-Membranous Croup. He says, "it is not claimed that it will cure Diphtheria in every instance, for we will meet with malignant cases in all epidemics of acute infectious disease which will resist every remedy, or, rather, where the patients are so thoroughly poisoned by the infection that they will die before any medicines can act upon them. But, in fact, so efficient do I consider chlorate of potassa, used in the manner which has been recommended, that I regard it quite as much a specific, if we may use such a word, for this disease, as is quinine in intermittents, or mercury in syphilis."

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